

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-244204

(43)Date of publication of application : 19.09.1995

(51)Int.Cl. G02B 1/11
G02B 5/28

(21)Application number : 06-034773

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(22)Date of filing : 04.03.1994

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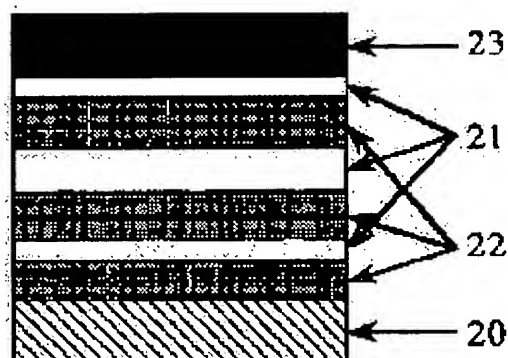
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(54) DUAL WAVELENGTH ANTI-REFLECTION FILM

(57)Abstract:

PURPOSE: To impart a sufficient anti-reflection effect to exposure light and alignment light and to provide an anti-reflection property to the wavelength (center wavelength) of exposure light covering a wide area by forming multilayered films alternately arranged with a high refractive index layers and an intermediate refractive index layers and a low refractive index layer as the outermost layer on the medium side.

CONSTITUTION: In the dual wavelength anti-reflection film having the minimum reflectance in the vicinity of the 1st wavelength of 248.4nm, and in the vicinity of the 2nd wavelength longer than the 1st wavelength, the anti-reflection film is constituted of multilayers consisting of the high refractive index layers and the intermediate refractive index layers arranged respectively alternately and of a low refractive index layer as the outermost layer on the medium side. One of ZrO_2 , HfO_2 , Sc_2O_3 and Y_2O_3 is used for the high refractive index film. For example, three alternately repeated layers of HfO_2 of the high refractive index film 21 and Al_2O_3 of the intermediate refractive index film 22 are put on a substrate made of a synthetic quartz as a lens so that the HfO_2 layers and Al_2O_3 layer are respectively alternately arranged and further MgF_2 layers of the low refractive index film 23 are formed thereon by a vacuum deposition method.



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[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of
rejection]

[Date of requesting appeal against examiner's
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[Date of extinction of right]

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